Mth 251, Section 002: Quiz # 6: Due on Tuesday 06/02, in class

PRINT your name:

Problem 1. (10 points) Find the equation of the tangent line at the given point

$$\sin(x+y) = x + \cos y, \quad \left(0, \frac{\pi}{4}\right)$$

Problem 2. (10 points) Find the min and max of the function on the given interval by comparing the values at the critical points and endpoints

$$y = x^3 + x^2 - x, \quad [-2, 2]$$

Problem 3. (20 points) Find the intervals on which the function f is concave up or down, the points of inflection, the critical points, and the local minima and maxima

$$f(x) = x^3 - 2x^2 + x - 1$$

Problem 4. (10 bonus points) Evaluate the limit

$$\lim_{x \to \infty} \left(\frac{x}{x+1} \right)^x$$